



# City of NORFOLK

To City Planning Commission  
City of Norfolk, Virginia

June 27, 2013

From: Robert J. Tajan, AICP, CFM *RJT*  
Senior Planner

**Subject:** Zoning Ordinance Text Amendment to Chapter 2, "Definitions," and to replace and reordain Chapter 11-3, "Floodplain/Coastal Hazard Overlay District (FPCHO)," to amend terms, simplify language and to add development requirements for properties located within the floodplain and to revise the way that height of principal structures is calculated.

Reviewed: Leonard M. Newcomb III, CFM  
Land Use Services Manager

**Ward/Superward:** Citywide

Approved:

*Frank M. Duke*  
Frank M. Duke AICP, Planning Director

**Item Number:** 1a

I. **Recommendation:** Staff recommends approval.

II. **Applicant:** City Planning Commission

III. **Description:**

This agenda item is for a Text Amendment to add development requirements for properties located within designated floodplains and to revise how height of principal structures is measured in order to better protect new and substantially improved structures.

IV. **Analysis**

Plan Analysis

- The Promoting Environmental Sustainability chapter of *plaNorfolk2030* calls for the City to prepare for the consequences of natural hazards.
  - The chapter calls for evaluating options to mitigate the impacts of flooding.
  - The chapter also calls on the City to improve its rating in the National Flood Insurance Program's Community Rating System.
  - The proposed changes to the *Zoning Ordinance* are consistent with the recommendations of these provisions.

Zoning Analysis

- Over 44,000 parcels in the city are potentially at risk of flooding according to the Flood Insurance Rate Maps provided to the city.
  - These parcels comprise less than 25% of the land area of the city.
- The *Zoning Ordinance* outlines the regulations for structures located within areas susceptible to flooding.
  - These regulations provide protection to properties located within Special Flood Hazard Areas as shown on the most recently adopted Flood Insurance Rate Maps.
  - The regulations provide development and construction requirements which are beyond the minimum standards required by the Uniform Statewide Building Code.
- Additional development requirements, above the minimum standard, are proposed to better protect citizens and properties from potential flood damage.

Proposed Regulation	Existing Regulation
Require the additional review of new development and additions in the Special Flood Hazard Areas by a licensed design professional.	New development and additions in the Special Flood Hazard Areas reviewed by city staff in the permit and inspection process.
Require the first floor level be elevated three (3) feet above the anticipated flood level.	Require the first floor level be elevated one (1) foot above the anticipated flood levels.
Identify Coastal Floodplain Districts (Coastal A Zone) and provide regulations.	No reference to Coastal A Zone designation.
Require a twenty-foot setback from the landward edge of mean high water.	No minimum setback required.
Require principal structures within 0.2% annual chance of flood to have a first floor 18 inches above grade or be floodproofed to that level.	No special development requirements for these areas.
Prohibit the construction of enclosed spaces below grade on all sides in Special Flood Hazard Areas.	Basements prohibited in Special Flood Hazard Areas.
Prohibit the use of breakaway walls.	Breakaway walls currently permitted.
Measure the height of principal structures from the city required elevation or the grade at the entrance of the structure, whichever is higher.	Height of a structure is measured at the entrance of the structure.
Require compliance with current regulations once the sum of damage and improvements over 10 year period exceeds 50% of market value of structure.	Require compliance with current regulations only if a single event of damage or improvements exceeds 50% of market value of the structure.



- Adoption of the proposed regulations would protect principal structures to a greater degree than current and would prohibit the use of certain types of construction.
- One proposal is to adjust the measurement of height for principal structures to use the higher of the city required elevation or ground level.
  - The proposed height measurement would allow existing principal structures to be raised and provide design flexibility for new structures without penalizing them for being located in a flood zone.
  - While this may be especially noticeable in historic districts, in many cases, the only alternative would be to raze the structure; a situation that is probably worse than allowing a slight increase in height.
- Flood protection currently required in the *Zoning Ordinance* will be enhanced.
- The proposed development requirements are consistent with the city-wide effort to address and mitigate for flooding problems in the City of Norfolk.

Traffic Analysis

N/A

**V. Financial Impact**

- The City of Norfolk participates in the Community Rating System of the National Flood Insurance Program.
  - Participating in this program reduces flood insurance premiums for all policy holders in Norfolk.
  - The proposed changes are intended to provide the City of Norfolk a better rating and therefore give residents a greater reduction in their flood insurance premiums.
- The proposed changes have the potential to increase construction costs of new construction and major improvements to existing structures.
  - The effective date of the revisions will be January 1, 2014 in an effort to reduce construction costs for projects under design.
- Structures built to the proposed requirements will benefit from reduced flood insurance premiums over structures built under the current requirements; in many cases, the reduction of insurance premiums is so significant as to amortize the added construction cost over a relatively short period of time and generally less than eight years.
- Inclusion of the Repetitive Loss provision provides access to funds for property owners who are seeking to raise their residence to comply with the current regulations.
- The proposed standards should reduce the total cost of ownership of new construction when combining insurance costs with acquisition costs.

**VI. Environmental**

- Properties built in accordance with the proposed regulations will be more resilient to flooding and wave action.
- The proposed regulations will provide better protection for slopes and wetlands near mean high water.

**VII. Community Outreach/Notification**

- Notice was posted on the City of Norfolk website on May 10.
- Public meetings for citizen and professional input were held on May 14, 17, 24, June 12 and 20.
  - A summary of the comments received is attached.
- Letters were mailed to all registered Civic League Presidents on May 10 and June 5.
- Notice was sent to the civic leagues by the Department of Communications on May 3 and June 12.
- A meeting was held with representatives of Hampton Roads Realtor Association and Tidewater Builders Association on June 3.
- One letter of opposition was received from a citizen.

**VIII. Coordination/Outreach**

This request has been coordinated with the Department of Planning and Community Development and the City Attorney's Office.

**Supporting Material from the Department of Planning and Community Development:**

- Proposed Text
- Summary of Comments from Public Meetings
- Civic League Letters
- Letter of opposition
- Letter from Hampton Roads Realtors Association

## EXHIBIT A

### 2-3 Definitions.

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*Building height.* The height of any structure or building measured as the vertical distance between the Roof Line and the Base, excluding any ancillary mechanical equipment, cupolas, chimneys, church steeples, flagpoles, rooftop penthouses for elevators or stairways, and similar ancillary features. For purposes of this definition only:

(a) The term "Roof Line" shall mean:

- (1) For a flat roof, the highest point of the roof surface;
- (2) For a mansard roof, the deck line; and
- (3) For a gable, hip or gambrel roof, the mean point between eaves and ridge.

(b) The term "Base" shall mean:

- (1) For principal structures, either the ground immediately adjacent to the structure at the midpoint of its main entrance or the Design Flood Elevation as defined in Chapter 11-3 of this ordinance, whichever is higher; and
- (2) For all other structures, including accessory structures, the ground immediately adjacent to the structure at the midpoint of its main entrance.

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## EXHIBIT B

### 11-3 Floodplain/Coastal Hazard Overlay Districts FPCHO.

#### 11-3.1 Purpose.

- (a) *Intent.* It is the intent of these regulations to permit the creation of Floodplain, Coastal Floodplain and Coastal High Hazard Districts in areas designated by the Federal Emergency Management Agency (FEMA) as "Special Flood Hazard Areas" and other areas identified as likely to benefit from floodplain management. Regulations within such districts are intended to prevent the loss of property and life, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base, all of which adversely affect the public health, safety, and general welfare. These flood losses are attributed to the cumulative effect of obstructions located in areas of special flood hazard, and the occupancy of areas of special flood hazard by uses and structures vulnerable to flood damage or structures inadequately elevated, anchored or flood-proofed.
- (b) *Scope of Regulations.* To accomplish these purposes, it is necessary to:
  - (1) Regulate uses, activities and development which, acting alone or in combination with other existing or future uses, activities and development, will cause unacceptable increases in flood heights, velocities and frequencies.
  - (2) Restrict or prohibit certain uses, activities and development from locating within certain areas of special flood hazards.
  - (3) Require all those uses, activities and development that do occur in areas of special flood hazards to be protected and/or flood-proofed against flooding, flood damage and wind damage.
  - (4) Protect individuals from buying lands and structures which are unsuited for certain purposes because of flood hazards.
  - (5) To ensure that adequate drainage is provided to reduce exposure to flood hazards.
- (c) *Findings.* The degree of flood protection sought by the provisions of

this overlay district is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study. Larger floods may occur. Flood heights may be increased by man-made or natural causes. This overlay district does not imply that districts outside the floodplain district or that land uses permitted within such district will be free from flooding or flood damages.

- 11-3.2 *Applicability.* The boundaries of the "Special Flood Hazard Areas" and "Other Flood Areas" shall be designated by the "Flood Insurance Study" (FIS) issued by FEMA and shown on the city's Flood Insurance Rate Map (FIRM) dated September 2, 2009, as amended. This map, as amended, is declared to be part of this ordinance and shall be kept on file in the offices of the Building Official and of the Zoning Administrator. The components of the "Special Flood Hazard Areas" and "Other Flood Areas" shall be:

- (a) Coastal High Hazard District (VE)
- (b) Coastal Floodplain District (Coastal A)
- (c) Floodplain District (AE and AH)
- (d) Other Flood Areas (X Shaded)

- 11-3.3 *Compliance and Liability.* No land shall hereafter be developed and no structure shall be located, relocated, constructed, reconstructed, enlarged, structurally altered or structurally improved nor any manufacture home placed on a lot or approved for utility service except in full compliance with the terms and provisions of this section and any other applicable ordinances and regulations.

Any development which alters or relocates a watercourse shall not diminish the flood-carrying capacity within the altered or relocated portion of the watercourse. Prior notification of any proposed development which would alter or relocate a watercourse in the City of Norfolk shall be provided to all affected, adjacent municipalities, the Federal Insurance Administration, and the Virginia Department of Conservation and Recreation or other state coordinating agency designated to assist with the National Flood Insurance Program. No new construction or development shall cause an increase of more than one foot, measured at any point, in the elevation of the water level of a one-hundred-year flood.

Records of actions associated with administering this overlay district shall be kept on file and maintained by the Zoning Administrator or his designee.

This section shall not create liability on the part of the City of Norfolk or any officer or employee thereof for any flood damages that result from reliance on this overlay district or any administrative decision lawfully made there under.



#### 11-3.4 *Abrogation and Greater Restrictions.*

The Special Flood Hazard Areas and Other Flood Areas as described above shall be overlays to the existing underlying districts as shown on the official zoning map, and as such, the provisions set forth in these floodplain regulations shall operate in conjunction with the underlying district provisions, as set forth in section 11-0. If there is any conflict between the provisions or requirements of this overlay district and those of any underlying district, the more restrictive provisions shall apply.

#### 11-3.5 *Severability.* If any section, subsection, paragraph, sentence, clause, or phrase of this overlay district shall be declared invalid for any reason whatever, such decision shall not affect the remaining portions of this overlay district. The remaining portions shall remain in full force and effect; and for this purpose, the provisions of this overlay district are hereby declared to be severable.

#### 11-3.6 *Penalty for violations.* Any person who fails to comply with any of the requirements or provisions of this article or directions of the Zoning Administrator or his designee shall be guilty of a misdemeanor and subject to the penalties therefore.

In addition to the above penalties, all other actions are hereby reserved, including an action in equity for the proper enforcement of this article. The imposition of a fine or penalty for any violation of, or noncompliance with, this article shall not excuse the violation or noncompliance or permit it to continue; and all such persons shall be required to correct or remedy such violations or noncompliances within a reasonable time. Flood insurance may be withheld from structures constructed in violation of this article.

#### 11-3.7 *Definitions.* For the purpose of these floodplain regulations, the following definitions shall apply:

*Base flood:* The flood having a one percent chance of being equaled or exceeded in any given year.

*Base flood elevation (BFE):* The elevation in feet of the one percent (1%) annual chance flood level, as shown in the FIS and FIRM.

*Basement:* Any area of a building having its floor sub-grade (below ground level) on all sides.

*Breakaway wall:* A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.



*Coastal Floodplain District:* Those areas identified as Coastal A Zones that have been delineated as being subject to wave heights between 1.5 feet and 3 feet and identified on the FIRM as areas of Limits of Moderate Wave Action (LiMWA).

*Coastal High Hazard District:* Those areas identified as VE Zones on the FIRM extending from offshore to the inland limit of the Coastal Primary Sand Dune, as defined by state law (Code of Virginia Title 28.2), and subject to wave heights of three (3) feet or more.

*Damage, repetitive loss:*

- (a) Flood related damages to a structure sustained on two (2) separate occasions during a ten (10) year period for which the cost of repairs at the time of each flood event, on the average, equals or exceeds twenty-five percent (25%) of the market value of the structure before the most recent damage occurred; or
- (b) Flood related damages to a structure sustained over a ten (10) year period for which the total cost of damages equals or exceeds fifty percent (50%) of the market value of the structure before the most recent damage occurred.

*Damage, substantial.* Damage, of any origin, sustained by a structure for which the cost of restoring the structure to its condition before the damage occurred would equal or exceed fifty percent (50%) of the market value of the structure before the damage occurred.

*Design Flood Elevation (DFE):* The BFE plus the freeboard required by this ordinance.

*Development:* Any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

*Elevation Certificate:* A document, prepared by a professional land surveyor, engineer, or architect, that verifies elevation and floodplain data of a structure relative to the ground level.

*Encroachment:* The advance or infringements of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

*Flood or flooding:*

- (a) A general or temporary condition of partial or complete inundation of normally dry land areas from either of the following:
  - (1) The overflow of inland or tidal waters; or
  - (2) The unusual and rapid accumulation or runoff of surface waters from any source.
- (b) The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in subparagraph (a)(1) of this definition.
- (c) Mudflows which are proximately caused by flooding as defined in subparagraph (a)(2) of this definition and are akin to a river of liquid and flowing mud on the surface of normally dry land areas, as when earth is carried by a current of water and disposed along the path of the current.

*Floodplain or flood-prone area:* Any land area susceptible to being inundated by water from any source

*Floodplain District:* Those areas designated as AE and AH Zones on the FIRM for which a one percent (1%) annual chance of flood elevations have been identified.

*Flood Insurance Rate Map (FIRM):* The official map on which FEMA has delineated both the Special Flood Hazard Areas and Other Flood Areas within the city. The FIRM may be available digitally.

*Freeboard:* The vertical distance between the BFE and the local minimum required lowest elevation in the AE, AH, VE, and Coastal A Zones that provides additional protection for the unknown or unquantified factors that could contribute to greater flood heights.

*Historic structure:* Any structure that is:

- (a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;



- (b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; or
- (c) Individually listed on the Virginia Landmarks Register.
- (d) Designated individually as a landmark or as a contributing structure within a locally designated historic district, to the extent such designation is permitted under and done in accordance with provisions of Chapter 9 or this ordinance.

*Lowest floor:* The lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or limited storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Federal Code 44 CFR § 60.3.

*Manufactured home:* A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term manufactured home also includes park trailers, travel trailers, and other similar vehicles placed one a site for greater than 180 consecutive days.

*Manufactured home park or subdivision:* A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

*New construction:* Structures for which the "start of construction" commenced on or after August 1, 1979.

*Other Flood Areas:* Those areas identified as X (Shaded) on the FIRM for which there is a one-fifth percent (0.2%) annual chance of flooding.

*Recreational vehicle:* A vehicle which is:

- (a) Built on a single chassis;
- (b) Measures four hundred (400) square feet or less when measured at the largest horizontal projection;
- (c) Designed to be self-propelled or permanently towed by a light duty truck; and

- (d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.

*Repetitive loss damage:* See "Damage, repetitive loss."

*Shallow flooding area:* A special flood hazard area with base flood depths from one (1) to three (3) feet where a clearly defined channel does not exist. Such flooding is characterized by ponding or sheet flow.

*Special Flood Hazard Areas:* The land in the floodplain subject to a one percent (1%) or greater annual chance of being flooded. These are designated as AE, AH, VE, and Coastal A on the FIRM.

*Start of construction:* The date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation on the property of accessory structures, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of the construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

*Substantial damage:* See "Damage, substantial."

*Substantial improvement:* Any reconstruction, rehabilitation, addition, or other improvement of a structure the cost of which either:

- (a) Equals or exceeds fifty percent (50%) of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "repetitive loss damage" regardless of the actual repair work performed; or
- (b) Over a ten (10) year period, equals or exceeds fifty percent (50%) of the market value of the structure at the time of the most recent proposed improvement.

Notwithstanding the above, the term does not include any of the following:

- (a) Any project for improvement of a structure to correct existing



violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions;

- (b) Any alteration of a "historic structure" provided that the alteration will not preclude the structure's continued designation as a "historic structure"; or
- (c) Any improvements associated solely with elevating a structure above the DFE.

*Watercourse:* A lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

11-3.8 *District Boundary Changes.* The delineation of any of the Special Flood Hazard Areas and Other Flood Hazard Areas may be revised by the City of Norfolk where natural or man-made changes have occurred and/or where more detailed studies have been conducted or undertaken by the U. S. Army Corps of Engineers or other qualified agency, or an individual documents the need for such change. However, prior to any such change, approval must be obtained from FEMA.

11-3.9 *Permit and Application Requirements.* All uses, activities, and development occurring within any floodplain district shall be undertaken only upon the issuance of a permit. Such development shall be undertaken only in strict compliance with the provisions of this ordinance, the Virginia Uniform Statewide Building Code, and all other applicable codes and ordinances. Prior to the issuance of any such permit, the Zoning Administrator or his designee shall require all applications to include compliance with all applicable state and federal laws. Under no circumstances shall any use, activity, and/or development adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.

All applications for development within any Special Flood Hazard Area and all building permits issued for the floodplain shall incorporate the following information.

- (a) For any rehabilitation, installation of new electrical or mechanical systems, or any structural repair with an estimated cost that is less than fifty percent (50%) of the market value of the structure, a current Elevation Certificate sealed by a licensed design professional is required.

- (b) For any addition, any conversion of any non-habitable space to habitable space, or the construction or installation of a new accessory structure that requires a building permit:
  - (1) A current Elevation Certificate sealed by a licensed design professional, and
  - (2) A physical survey, performed after the effective date of the FIRM that,
    - (i) Accurately depicts current improvements on the property,
    - (ii) Provides a flood zone determination and the BFE at the site, and
    - (iii) Delineates the location of the flood zones on the property.
- (c) For new construction and any substantial improvement of a principal structure:
  - (1) A proposed site plan sealed by a design professional that provides:
    - (i) Topographic data;
    - (ii) Proposed grades, grading and stormwater management;
    - (iii) All proposed structures and improvements;
    - (iv) Proposed finished floor elevations of structures;
    - (v) Flood zone determination and BFE with the FIRM reference, and
    - (vi) All other information as required by any applicable provision of Chapter 26, "Site Plan Review" or Section 11-2, "Chesapeake Bay Preservation Area Overlay District."
  - (2) An Elevation Certificate based on the proposed development showing compliance with these floodplain regulations.



- (3) For non-residential structures proposed to be flood-proofed, a flood-proofing certificate based on the proposed development showing compliance with these floodplain regulations.
  - (d) Any additional information deemed by the Zoning Administrator to be necessary to perform the required review.
- 11-3.10 *General Standards.* In the Floodplain, Coastal Floodplain and Coastal High Hazard districts the following provisions shall apply:
- (a) The Freeboard shall be three (3) feet.
  - (b) Any new construction or substantial improvement to principal residential structures shall be a set back a minimum of twenty (20) feet from mean high water.
  - (c) For residential construction, the lowest floor shall not be below grade on all sides.
  - (d) New construction and substantial improvements shall be built in accordance with the Virginia Uniform Statewide Building Code, and anchored to prevent flotation, collapse or lateral movement of the structure and all portions at or below the DFE shall be constructed of materials resistant to flood damage.
  - (e) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with the Virginia Uniform Statewide Building Code.
  - (f) New construction or substantial improvements shall be constructed using methods and practices that minimize flood damage.
  - (g) Electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities, including ductwork, shall be:
    - (1) Elevated and installed at or above the DFE; or
    - (2) Designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding or as allowed by the Virginia Uniform Statewide Building Code and ductwork shall be installed a minimum of one (1) foot above the BFE.
  - (h) New and replacement water supply systems shall be designed to

minimize or eliminate infiltration of floodwaters into the system.

- (i) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters.
- (j) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
- (k) For any structure that is non-conforming, any alteration, repair, or improvement shall be undertaken only if said nonconformity is not furthered, extended, or replaced.
- (l) Prior to any proposed alteration or relocation of any channels or of any watercourse, stream, etc., within this jurisdiction a permit shall be obtained from the U. S. Army Corps of Engineers, the Virginia Department of Environmental Quality, and the Virginia Marine Resources Commission.

Furthermore, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, the Department of Conservation and Recreation, Division of Dam Safety and Floodplain Management, and the Federal Insurance and Mitigation Administration.

- (m) The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.
- (n) An Elevation Certificate and, if applicable, a flood-proofing certificate shall be provided prior to any foundation inspection, final inspections, and the issuance of any Certificates of Occupancy, in order to assure compliance with these floodplain regulations.

11-3.11 *Specific Standards for the Coastal High Hazard and Coastal Floodplain Districts.* In VE and Coastal A Zones, the following provisions shall apply:

- (a) All new construction and substantial improvements shall be elevated on pilings or columns such that:
  - (1) The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated at or above the DFE; and
  - (2) The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement



due to the effects of wind and water loads acting simultaneously on all building components, where the wind and water loading values are those that each have a one percent (1%) chance of being equaled or exceeded in any given year (one-percent annual chance).

- (b) A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the proposed design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of subsection (a), above.
- (c) The Zoning Administrator or his designee shall obtain the elevation (in relation to mean sea level) of the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings and columns) and shall maintain a record of such information.
- (d) All new construction shall be located landward of the reach of mean high tide.
- (e) For new construction and substantial improvements, the space below the lowest floor shall be maintained free of obstruction and the usage of breakaway walls at or below the DFE is prohibited.
- (f) The space below the lowest floor shall be used solely for parking of vehicles, building access, or storage. Such space shall not be partitioned into multiple rooms, temperature-controlled, or used for human habitation.
- (g) The use of fill for structural support of a building or structure is prohibited. When fill is proposed in a Coastal High Hazard district, appropriate engineering analyses shall be conducted to evaluate the impacts of the fill prior to issuance of any development permit.
- (h) The intentional alteration of a Coastal Primary Sand Dune, as defined by state law (Code of Virginia Title 28.2), which causes an increase in the likelihood of flood damage is prohibited.
- (i) All manufactured homes and recreational vehicles to be placed or substantially improved within VE and Coastal A Zones on the FIRM must meet the standards of subsections (a) through (h), above, and section 11-3.10.

11-3.12 *Specific Standards in the Floodplain District.* In AE and AH Zones, the following provisions shall apply:

- (a) *Residential Construction.* New construction or substantial improvement of any residential structure (including manufactured homes) shall have the lowest floor (including basement) elevated at or above the DFE or the elevation required by the Virginia Uniform Statewide Building Code, whichever is higher.
- (b) *Non-Residential Construction.* New construction or substantial improvement of any commercial, industrial, or non-residential building, other than an accessory building, shall have the lowest floor (including basement) elevated at or above the DFE or the elevation required by the Virginia Uniform Statewide Building Code, whichever is greater. Such non-residential buildings located in AE and AH Zones may be flood-proofed in lieu of being elevated, provided that all areas of the building components below the DFE are watertight, with walls substantially impermeable to the passage of water, and use structural components capable of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that all applicable engineering standards are satisfied.
- (c) *Buildings with enclosed spaces below DFE.* For all new construction or substantial improvements to an existing building, other than an accessory building, any enclosed space below the DFE shall:
  - (1) Not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door), limited storage (standard exterior door or access panel) or entry to the building access (stairway or elevator).
  - (2) Be constructed entirely of flood resistant materials below the DFE.
  - (3) Include measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings either must be certified by a professional engineer or architect as meeting these hydrostatic standards or must meet the following minimum design criteria:
    - (i) Provide a minimum of two (2) openings on different sides of each enclosed area subject to flooding.
    - (ii) All openings must either:



- (A) Have a net area not less than one (1) square inch for each one (1) square foot of enclosed area subject to flooding; or
    - (B) Be certified by a professional engineer or architect as providing adequate water flow capacity given the extent of the enclosed area subject to flooding.
  - (iii) If a building has more than one (1) enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.
  - (iv) The bottom of all required openings shall be no higher than one (1) foot above the adjacent grade.
  - (v) Openings may be equipped with screens, louvers, or other coverings or devices, provided they permit the automatic flow of floodwaters in both directions.
  - (vi) A foundation enclosure made of flexible skirting is not considered an enclosure for purposes of these floodplain regulations, and, therefore, does not require openings. A foundation made of masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires the openings described above.
- (d) *Accessory Buildings:* For any new construction or substantial improvement of any accessory building, the building shall be constructed entirely of flood resistant materials below the DFE and:
- (1) When no space below the BFE is enclosed, the lowest floor shall be elevated at or above the BFE.
  - (2) When any space below the BFE is enclosed, the building shall only be used for parking of vehicles or limited storage, and shall comply with the requirements set forth in subsection (c)(3), above.
- (e) *Manufactured Homes and Recreational Vehicles.* The following requirements shall apply to all Manufactured Homes and Recreational Vehicles located in any AE or AH Zone:
- (1) Any newly placed or substantially improved manufactured home shall be elevated so that the lowest floor is at or above

the DFE and shall meet all other general standards set forth in section 11-3.10 that apply to new construction.

- (2) All recreational vehicles must either:
  - (i) Be removed after being located on a site for 180 consecutive days and be fully licensed and ready for highway use. (A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick-disconnect type utilities and security devices, and has no permanently attached additions); or
  - (ii) Meet all the requirements for manufactured homes set forth above.

11-3.13 *Specific Standards for Other Flood Areas.* In X (Shaded) Zones, the following requirements shall apply:

- (a) All new construction shall have the lowest floor, including basement, elevated or flood-proofed to one and one-half (1.5) feet above the highest grade immediately adjacent to the structure.
- (b) For purposes of applying the limitations set forth in Chapter 12, "Nonconformities," any structure lawfully constructed prior to January 1, 2014, which does not meet this requirement shall not be considered nonconforming with respect to these floodplain regulations.

11-3.14 *Standards for Subdivision Proposals.*

- (a) All subdivision proposals shall be consistent with the need to minimize flood damage;
- (b) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;
- (c) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards; and
- (d) BFE data shall be provided for all subdivision proposals and other development proposals (including manufactured home parks and subdivisions).

11-3.15 *Variances; factors to be considered.* The Board of Zoning Appeals has the



power to authorize, upon application, variances from the regulations of this overlay district and consider the following factors, in addition to the requirements of Chapter 22, "Variances":

- (a) The showing of good and sufficient cause.
- (b) The danger to life and property due to increased flood heights or velocities caused by encroachments. No variance shall be granted for any proposed use, development, or activity that will cause any increase in the BFE.
- (c) The danger that materials may be swept on to other lands or downstream to the injury of others.
- (d) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
- (e) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
- (f) The importance of the services provided by the proposed facility to the community.
- (g) The requirements of the facility for a waterfront location.
- (h) The availability of alternative locations not subject to flooding for the proposed use.
- (i) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
- (j) The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.
- (k) The safety of access by ordinary and emergency vehicles to the property in time of flood.
- (l) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters expected at the site.
- (m) The repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.

- (n) Such other factors which are relevant to the purposes of this overlay district.

The Board of Zoning Appeals may refer any application and accompanying documentation pertaining to any request for a variance to any engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights or velocities and the adequacy of the plans for flood protection and other related matters.

11-3.16 *Required Findings.* Variances shall be issued only after the Board of Zoning Appeals has determined that the variance will be the minimum required to provide relief and that the granting of such will not result in any of the following:

- (a) Unacceptable or prohibited increases in flood heights;
- (b) Additional threats to public safety;
- (c) Extraordinary public expense;
- (d) Any nuisance;
- (e) Fraud or victimization of the public; or
- (f) Conflict with local laws or ordinances.

11-3.17 *Notification.* The Board of Zoning Appeals shall notify the applicant for a variance, in writing, that the issuance of a variance to construct a structure below the BFE:

- (a) Will increase the risks to life and property; and
- (b) Will result in increased premium rates for flood insurance.

A record shall be maintained of the above notification as well as all approved variances from the provisions of this overlay district, including justification for the issuance of each variance. Any variances that are issued shall be noted in the annual or biennial report submitted to the Federal Insurance Administrator.

11-3.18 *Existing structures in Special Flood Hazard Areas.* A structure lawfully constructed prior to January 1, 2014, but which is not in conformity with these floodplain regulations shall be subject to the following limitations:

- (a) Any alteration, repair or improvement to a building, excluding any addition, shall only be permitted if the cost of all proposed work does not exceed fifty percent (50%) of the market value of the structure



and all proposed work complies with all requirements of the Virginia Uniform Statewide Building Code;

- (b) Any substantial improvement or any repair of a structure that has suffered repetitive loss damage shall only be permitted if, after the work is completed, the entire structure complies fully with these floodplain regulations and all requirements of the Virginia Uniform Statewide Building Code; and
- (c) Any repair or reconstruction of a structure that has suffered substantial damage, any addition to a building, or any conversion of an existing, non-habitable area to a habitable area shall only be permitted if all proposed work complies with the requirements of this zoning ordinance, including but not limited to the limitations of Chapter 12, and the Virginia Uniform Statewide Building Code.

## Floodplain Regulations

### Comments on Proposed Revisions

June 5, 2013

Comment	Staff Response	Source of Comment
Who would bear the cost of raising a house to meet current requirements.	The owner of the property would be responsible for the costs of compliance along with their flood insurance. The city is actively pursuing assistance for property owners to comply and mitigate for flood problems	Community Meeting 1
Prospective homebuyers need to receive disclosure of prior water damage.	Flood zone disclosure is not required by the Commonwealth of VA. Requiring disclosure of prior damage is difficult due to insurance privacy. Records of improvements will be a part of record keeping if changes are adopted; these will be available for disclosure.	Community Meeting 2 and HRRRA/TBA meeting
The proposed changes make sense but more technical expertise will be needed to evaluate the cost impact to a typical new construction/renovation project.	The cost to elevate to meet the 3-foot freeboard will be recovered in the 5-8 years of mortgage based on the savings in flood insurance premiums. For renovations, there should be a nominal impact to meet proposed requirements.	Community Meeting 2
Restrict/limit/not allow ductwork below the 3 foot freeboard or require that construction is easily accessible and replaceable.	Ductwork will be required to be elevated 1 foot above BFE and also will be required to be built to resist floatation and to prohibit the accumulation of water (floodproofed) if below the DFE.	Community Meeting 3
Retention of information about past improvements to structures is vital for prospective homeowners.	Information on permits within Special Flood Hazard Area will be stored and filed and will be accessible. Credit for 3 feet of freeboard by imposing a required 2.5 feet of freeboard may reduce insurance premiums for some policies but does not count toward CRS credit for the city. The need for protection from flood waters is as important as the insurance premiums and the cost of 1/2 foot higher of construction is nominal.	HRRRA/TBA meeting
Other localities are looking to gain 1 foot credit for imposing 1/2 foot of freeboard.		HRRRA/TBA meeting
The new requirements will devalue my residence.	Residences that are not in a flood zone or have not suffered flood damage will not be adversely affected by the changes. Properties that need major renovations or have major damage will have to comply with regulations, the increased resilience gained from compliance may increase the value of the home.	Phone Call and Letter of opposition
Structures will be required to be raised 5 feet higher with the regulations.	Proposed regulations allow for ductwork to be 1 foot above BFE (see above). The proposed freeboard is to be increased to 3 feet causing new construction to only be 2 feet higher than what is currently required.	Letter of opposition
New housing meeting these requirements will be incompatible with existing neighborhoods.	Neighborhood compatibility is only reviewed within Historic Districts and requires approval through the Design Review process. The proposed changes help to mitigate flooding and improve the resiliency of structures.	Letter of opposition



# Floodplain Regulations Comments on Proposed Revisions

June 5, 2013

Comment	Staff Response	Source of Comment
Requiring the higher finished floor will cause ADA accessibility issues.	Limitations will exist due to the need to provide access to structures. Designers will have to be creative in trying to comply both with the floodplain regulations and other applicable codes or ordinances.	Letter of opposition and Community Meeting 3
Sheds and garages will be required to be built 5 feet off the ground.	Sheds and garages are permitted to be built within the floodplain as long as they are constructed of flood resistant materials, contain flood vents, and all other electrical/mechanical components are elevated at or above the DFE.	Community Meeting 1 and letter of opposition
Where will mean high water be measured from?	Environmental Services in the Planning Department retains an updated list of mean high water along the coast lines of the city. This list is updated by Public Works - Stormwater and will be provided upon request to any applicant, citizen or property owner.	Community meeting 3
Other localities are proposing a waiver process for substantial improvements to existing structures above the BFE but below the DFE. Has this been considered?	For certain circumstances, a variance can be requested from the Board of Zoning Appeals for relief from the regulation. Findings for a variance require something unique about the land that makes it not feasible to comply with the current requirements. The risk of flooding has been identified and the regulations for these areas should be uniformly enforced for all improvements.	HRRRA/TBA meeting
The 10 year Cumulative Substantial Damage and Improvements is a dramatic change from the current requirement. A five (5) year time frame would more appropriate.	Structures that have been damaged over multiple years should be properly protected if the total damage is over 50% of the market value.	HRRRA and TBA
Will the city approach property owners that are repetitively damaged to purchase the home and turn the space into open space?	The current effort is to protect citizens and property. Over time it may be necessary to purchase some properties that can provide a benefit in flooding areas as open space.	Community meeting 4



May 9, 2013

Dear Civic League President:

The City Planning Commission is considering amending Norfolk's floodplain regulations to provide a potential increase in flood protection for new homes as well as those undergoing major renovation. The actions may reduce flood insurance premiums for homeowners. Prior to the public hearing on June 27, 2013, Planning Department staff will be presenting the proposed changes and listening to the public at three community meetings:

**Lamberts Point Community Center**

1251 W. 42nd Street  
Tuesday, May 14, 2013  
6:30-8 p.m.

**Mary D. Pretlow Library**

111 W. Ocean View Avenue  
Thursday, May 16, 2013  
6:30-8 p.m.

**Workforce Development Center**

(Design Professional focused)  
201 E. Little Creek Road  
Friday, May 24, 2013  
2-4 p.m.

Please share the attached flyer with your community. If you have any questions or would like additional information prior to the meetings, please contact Bobby Tajan on my staff at (757) 664-4756 or at [Robert.Tajan@norfolk.gov](mailto:Robert.Tajan@norfolk.gov). Information on the proposed changes is also available on the planning department website at [www.norfolk.gov/planning](http://www.norfolk.gov/planning).

Sincerely,

Frank M. Duke, AICP  
Planning Director





June 5, 2013

Dear Civic League President:

The City Planning Commission is considering amending Norfolk's floodplain regulations to provide increased flood protection requirements for new homes as well as those undergoing major renovation. The actions proposed may reduce flood insurance premiums for homeowners. This item is scheduled for the June 27, 2013 Planning Commission meeting.

If you have any questions or would like additional information prior to the public hearing, please contact Lenny Newcomb or Bobby Tajan at (757) 664-4752 or at [Lenny.Newcomb@norfolk.gov](mailto:Lenny.Newcomb@norfolk.gov) or [Robert.Tajan@norfolk.gov](mailto:Robert.Tajan@norfolk.gov). Information on the proposed changes is also available on the planning department website at [www.norfolk.gov/planning](http://www.norfolk.gov/planning).

Sincerely,



Frank M. Duke, AICP  
Planning Director

**Richard Wells Gresham, AIA, LEED AP**

Vice President, / Head of Construction  
E.T. GRESHAM COMPANY, Inc.  
P.O. Box 1077 Norfolk, VA  
23501-1077

May 30, 2013

City Council  
City Hall Building  
Norfolk, VA 23510

Re: **CHANGES TO THE FREEBOARD FLOOD ELEVATION**

Councilpersons,

As a Norfolk citizen / landowner I rely on you to make sound assessments of the impact changes proposed by City staff. This is especially true when considering the effects of raising the freeboard elevation. I would urge full consideration of the benefits and possible collateral damage to Norfolk's neighborhoods and property owners. However the proposed increase to three feet of freeboard may have significant implications that need to be carefully weighed.

As a practitioner who regularly deals with flood elevation issues, I see practical implications that need to be evaluated. If one assumes- as an example- that existing structures are at or near the existing 'flood' elevation (which is true of a great deal of Norfolk's real estate) some repercussions that concern me are:

Destruction of residential neighborhoods' fabric and integrity caused by infusing new or raised structures built up to 5 feet higher [freeboard + duct clearance + floor structure] than existing houses. New housing interjected into existing neighborhoods would have characteristics incompatible with the existing streetscapes. All that had been sought through initiatives like the *Norfolk Pattern Book* and other community preservation programs would be wasted. The new renovated housing would loom over adjoining structures and, of course, require major stairs, ramps, steps to access the primary floor.

The collateral financial impact of the de-valuation of existing housing and building stock could be considerable. Requiring building additions to perhaps be up to 5 feet higher than existing structures in most cases simply doesn't work. This will relegate homes and business structures obsolete or greatly devalued. Thus their marketability will plummet and slumming will occur even in some of Norfolk's most valuable neighborhoods. That homeownership, one of the most significant investment one strives to achieve in life, could be devalued by government fiat is very concerning to me.

Complications in complying to other codes needs to be considered. Having codes fighting other codes will hamstring designers, business owners, and residence as they strive to improve properties and communities. Two examples that come quickly to mind from recent projects are: First, Americans with Disabilities Act (ADA / Fair housing access requirements), and zoning regulations limiting the height of accessory structures. ADA ramping for a 5 foot elevation change could require 80 running feet of ramping and landings. Second, the zoning average roof height of 14' above grade for accessory buildings could hypothetically provide less than 9' after the elevation change - meaning 'sheds' might have nearly flat roof structures.

While changing the flood elevation will potentially protect many from flood damage losses- no elevation change will even begin to insure real safety from hurricane storm flooding. And if the freeboard increase is meant to keep up with changes in the rising flood elevation brought on by Norfolk "sinking" and / or global warming's impact, remember that over the last 50 years there has been only 4" to 6" increase and the forecast for the ensuing 50 years remains in measurements of inches-not feet. Thus a 3 foot freeboard increase, as I understand it, could be requiring mandating elevations not likely to be needed for a few hundred years.

For City government, this change would appear to be a clear win; the citizens would have greater protection from flooding and the infusion of federal funds would benefit municipal coffers. However I hope my comments will provide helpful input for your deliberations and that you will reconsider what I fear is an over zealous change affecting property owners throughout our City.

Yours very truly,



Richard Wells Gresham, AIA, LEED AP  
P.O. Box 1077  
Norfolk, VA 23501



# Center for Real Estate

HAMPTON ROADS REALTORS<sup>®</sup> ASSOCIATION

June 25, 2013

Mr. Earl Fraley, Jr.  
Chairman, Norfolk Planning Commission  
810 Union Street, Suite 508  
Norfolk, VA 23510

Dear Mr. Fraley:

The Hampton Roads REALTORS<sup>®</sup> Association (HRRRA) has been following closely the City of Norfolk's review of and proposed changes to its floodplain ordinance. As Hampton Roads continues to suffer from the damage of flooding events, it is only appropriate that the underlying development policies are reviewed in order to best protect existing and future properties.

The changes made to the National Flood Insurance Program last year only increase the need for this review. As grandfathered insurance policies are eliminated and others are brought up to the actuarial rates, homeowners and others with property located within a flood zone are sure to feel the pinch. Given the low-lying nature of the city and the abundance of water, this will impact a significant number of citizens in Norfolk.

However, participation in FEMA's Community Rating System (CRS) provides an avenue for some relief. Currently property owners in Norfolk receive a 5% discount associated with the city's participation in CRS. However, with a few reasonable amendments to the city's ordinance, the city's rating can be increased, and all property owners with a flood insurance policy will be afforded a 10% or even 15% discount on their premium. Participation will provide a real financial benefit to the city's citizens at minimal cost to the city, while also protecting future investments from potential damage.

The amendments must be reasonable though. Placing burdens on existing homeowners unrelated to flood risk mitigation or in a proportion which exceeds anticipated costs should be avoided. While we have not yet been able to review the exact language of the proposed ordinance, many of the proposed changes seem to strike the appropriate balance (e.g., the change to measuring height elevation from the Design Flood Elevation), but there are a couple areas which we believe could use some modification.

Our first and primary concern regards the change to calculate cumulative substantial damage or improvement from the current practice of applying that provision to a single event. The Repetitive Loss provision adequately addresses property that suffers multiple flood damages. The Substantial Damage/Improvement provision then requires often costly compliance for properties regardless of their flooding history; the cost of raising the elevation of an existing home has been estimated as high as \$100,000 or more. Damage could occur from fire, wind, trees, or even vehicular accidents. Improvements could be in the form of additions or remodeling. While the desire to protect future investments is understandable, the change in calculation from a single incident to a ten year cumulative total is quite dramatic. Furthermore, unlike the Repetitive Loss provision, Substantial Damage/Improvement would have no impact on the availability of Increased Cost of Compliance (ICC) funds to affected property owners. Given the dramatic change from the current standard, the lack of



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Mr. Earl Fraley, Jr.  
June 21, 2013  
Page 2

assistance provided for affected properties, and the lack of a connection between the damage and need for improvements, HRRRA cannot support a cumulative total calculation of more than five years.

Secondly, while unknown in quantity, there are a number of properties which meet or exceed the current design requirements but which would not conform to the proposed new requirements of three feet of freeboard and/or a twenty foot setback from water. These properties should be distinguished from other existing properties in a flood zone which do not meet even the current requirements. Understanding that an existing process exists for reviews and exceptions through the Board of Zoning Appeals (BZA), absent a new process for these properties, then either guidance should be issued to BZA for treating these properties differently or property owners need to be advised of their options and how to pursue them. Such property owners would undergo added hardship for limited benefit and deserve special consideration.

Finally, the technology and associated data collection needed for these efforts to be successful cannot be overlooked. While separate from the particulars of this ordinance, the Planning Department and other city staff must have access to the tools necessary to collect and maintain the data to effectively monitor and enforce these requirements. Some of this is underway, but it must continue and additional resources, financial and otherwise, need to be made available as needs arise.

In closing, I would be remiss if I did not mention the excellent work performed by city staff throughout this process. As an association, we have had several discussions with Frank Duke, Bobby Tajan, George Homewood, Leonard Newcomb, and others and have received excellent explanations where we had questions or concerns. Staff should be applauded for their diligent work on this effort.

If you, any other Planning Commission members, Planning Department staff, or members of City Council have any questions about our positions on these issues, please don't hesitate to contact HRRRA's Government Affairs Director, Andrew M. Sinclair, at [asinclair@hrra.com](mailto:asinclair@hrra.com) or 757-473-9700. Thank you again for including us in this process and for your careful consideration of our comments.

Sincerely,



Jimmy Jackson  
Governmental Affairs Chairman